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TI Herbicide compositions containing 3-substituted phenylpyrazoles, organophosphorus compounds, and nonionic surfactants

IN Yasueda, Masahiro; Higashimura, Minoru; Nakatani, Motokatsu; Mabuchi, Tsutomu; Shibayama, Shoichi

PA Nihon Nohyaku Co Ltd, Japan

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CC 5-3 (Agrochemical Bioregulators)

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GI Diagram(s) available in offline prints and/or printed CA Issue.

AB Herbicide compns. contain .gtoreq.1 of 3-substituted phenylpyrazoles I [R = Y1R3 [R3 = C1-6 (halo)alkyl, C2-6 alkenyl, C2-6 alkynyl; Y1 = O, S], Y2CHR4CO2R5 [R4 = H, C1-6 alkyl; R5 = H, C1-6 (halo)alkyl, C2-6 alkenyl, C2-6 alkynyl; Y2 = O, S, NH], CO2CHR4COY1R5 (R4, R5, Y1 = same as above), CO2R6 (R6 = C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl); R1 = C1-6 alkyl; R2 = H, C1-6 (halo)alkyl; X1, X2 = halo; Y = O, S, SO, SO2; n = 0, 1] and organophosphorus herbicides as active ingredients and .gtoreq.1 nonionic surfactants. The compns. are stable and show fast-acting and synergistic herbicidal effect. I (R = OCH2CO2Et, R1 = Me, R2 = CHF2, X1 = F, X2 = Cl, Yn = O) (II) 25.0, Neocol YSK (anionic surfactant) 1.0, SP-7290P (anionic surfactant) 2.0, aq. 3% xanthan gum soln. 15.0, propylene glycol 3.0, Silicone KM-73 0.5, and H2O to 100 wt. parts were mixed to give a suspension, 0.80 wt. parts of which was mixed with N-(phosphonomethyl)glycine trimethylsulfonium salt (III) 51.70, Neocol YSK 1.00, Dispersogen A-1494 2.00, Brian DL-400 (polyoxyethylene glycol dilaurate surfactant) (IV) 10.00, aq. 3% xanthan gum soln. 10.00, propylene glycol 5.00, benzisothiazole 0.05, and H2O to 100.00 wt. parts to give a suspension. Spray application of the suspension at 1 g/ha as II and 150 g/ha as III controlled Echinochloa crus-galli and Rumex japonicus by 60% and 50%, resp., in 3 days, vs. 30% each, for application of a control formulated without IV. The suspension was kept at 50.degree. for 4 wk to show 95.7% residual II and 99.7% residual III, vs. 27.6% and 93.0%, resp., for a control formulated without IV.

ST phenylpyrazole organophosphorus herbicide nonionic surfactant; synergism phenylpyrazole organophosphorus herbicide suspension

IT Polyoxyalkylenes, biological studies

RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)

(surfactants; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Amides, biological studies

RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)

(N-(hydroxyethyl), ethoxylated, stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Glycosides

RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (alkyl, surfactants; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Fatty acids, biological studies  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (esters, surfactants; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Amines, biological studies  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (ethoxylated, stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Alcohols, biological studies  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (ethoxylated, surfactants; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Surfactants  
 (nonionic, stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Alcohols, biological studies  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (polyhydric, surfactants; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Agrochemical formulations  
 (powders, wettable, stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Agrochemical formulations  
 (suspensions, stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT Herbicides  
 (synergistic, stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT 9005-02-1  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (Brian DL 400; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT 9016-45-9, Polyoxyethylene nonylphenol ether  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
 (Soprophor BS 10; stable and fast-acting synergistic herbicides contg. substituted phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT 56-81-5, Glycerol, biological studies 12441-09-7, Sorbitan  
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)

(fatty acid esters; stable and fast-acting synergistic herbicides  
contg. substituted phenylpyrazoles, organophosphorus herbicides, and  
nonionic surfactants)

IT 1071-83-6D, N-(Phosphonomethyl)glycine, mixts. with phenylpyrazoles  
35597-43-4D, mixts. with phenylpyrazoles 53369-07-6D, mixts. with  
phenylpyrazoles 171667-10-0

RL: AGR (Agricultural use); BAC (Biological activity or effector, except  
adverse); BIOL (Biological study); USES (Uses)

(stable and fast-acting synergistic herbicides contg. substituted  
phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

IT 50-70-4D, Sorbitol, fatty acid esters 57-50-1D, Sucrose, fatty acid  
esters 1338-39-2, Span 20 9002-92-0, Noigen ET 143 9005-66-7, Tween  
40 25618-55-7D, Polyglycerin, fatty acid esters 104552-09-2,  
Polyoxyethylene styrylphenyl ether 106392-12-5, HOE-S 3510  
172344-91-1, HOE-S 2436

RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL  
(Biological study); USES (Uses)

(stable and fast-acting synergistic herbicides contg. substituted  
phenylpyrazoles, organophosphorus herbicides, and nonionic surfactants)

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